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










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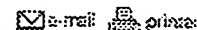
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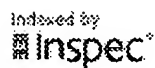
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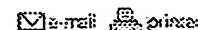
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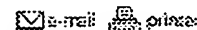
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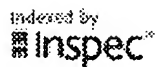
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19th IEEE VLSI Test Symposium p. 0326

## Burn-In Failures and Local Region Yield: An Integrated Yield-Reliability Model

Thomas S. Barnett, Auburn University  
 Adit D. Singh, Auburn University  
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Defects have long been known to cluster on semiconductor wafers. Recent research has shown that this fact may be exploited to produce die of high reliability, (i.e. decreased infant mortality), by sorting die into bins based on how many of their neighbors test faulty. Die that test good at wafer probe, yet come from neighborhoods with many faulty die, have a higher incidence of infant mortality failure than die from neighborhoods with few faulty die. Analysis of burn-in results from the SEMATECH test methods experiment [2] suggests that such a binning approach has the potential to isolate a high quality bin that displays very few burn-in failures. This paper presents the first analytical model that quantifies the reliability improvement one might expect when binning die based on local region yield.

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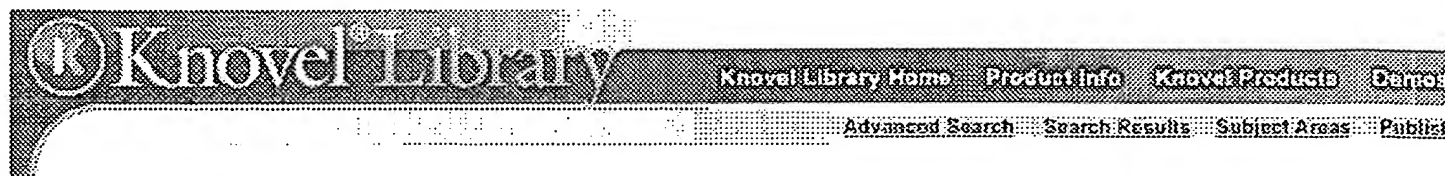
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